

October 6, 2005

Ms. Renee Orr
5-Year Program Manager
Minerals Management Service (MS-4010), U.S. Department of the Interior
Room 3120
381 Elden Street
Herndon, Virginia 20170

RE: Scoping Comments on the Interior Department's 5-Year Outer Continental Shelf
(OCS) Oil and Gas Leasing Program for 2007-2012 and Development of an EIS
for the 5-Year Program
DEQ-05-230F

Dear Ms. Orr:

This is in response to the notice by the Department of the Interior's Minerals Management Service (MMS) requesting comments on preparation of a new five-year OCS oil and gas leasing program and scoping comments for the development of an Environmental Impact Statement (EIS) covering that program (Federal Register, Volume 70, Number 163, dated August 24, 2005, pages 49669 through 49679, hereinafter cited as "the Notice"). The leasing program would be developed for the period from July 2007 to July 2012 to succeed the current 5-year program. Section 18 of the OCS Lands Act (43 U.S.C. 1344) requires the Department of the Interior (DOI) to solicit information from interested and affected parties in developing the new program. MMS will also prepare an EIS that analyzes the alternatives considered for the new 5-year program (Notice, page 49669).

For administrative convenience, this letter addresses both the development of the leasing program and the preparation of the Draft EIS. Part A, "Discussion of Planning Information Requested by MMS," addresses the former; Part B, "Scoping for EIS," follows Part A and gives scoping comments for the Draft EIS. We are mailing two copies of the letter and enclosures, with the envelopes marked as you directed in the Notice (page 49670).

MMS Mandates

1. Section 18 of the Outer Continental Shelf (OCS) Lands Act

According to the Federal Register notice, MMS is requesting comments from state agencies, local governments, and regional planning agencies, among others, on a wide range of information, including marine productivity and environmental sensitivity. Specific factors which must be analyzed and considered in deciding where and when to lease include: (1) existing information on the geographical, geological, and ecological characteristics of such regions; (2) equitable sharing of development benefits and environmental risks among the various regions; (3) locations of such regions and regional and national energy markets; (4) location with respect to other current and anticipated uses of the sea and seabed; (5) expressed industry interest; (6) laws, goals, and policies of affected states specifically identified by governors; (7) relative environmental sensitivity and marine productivity of different areas of the OCS; and (8) environmental and predictive information for different areas of the OCS. The OCS Lands Act requires the Secretary to obtain a proper balance among the potentials for environmental damage, the discovery of oil and gas, and adverse impact on the coastal zone, using cost-benefit analysis (Notice, pages 49671-2).

2. Preparation of an Environmental Impact Statement

Pursuant to section 102(2)(C) of National Environmental Policy Act (NEPA), the MMS intends to prepare an Environmental Impact Statement (EIS) for the new 5-year OCS oil and gas leasing program for 2007-2012. The Notice began the scoping process for the EIS under 40 CFR Part 1501, section 1501.7, and solicits information regarding issues and alternatives that should be evaluated in the EIS. The EIS will address the potential impacts of the adoption of the proposed 5-year program. MMS invites comments on significant environmental issues attendant upon OCS oil and gas leasing and development, and on alternative options for the size, timing, and location of lease sales that should be evaluated in the EIS. MMS will consider these comments for the purposes of determining the scope of the EIS it plans to prepare and the schedule for scoping (Notice, page 49673).

Virginia's Responsibilities and Expectations

1. Virginia's Review of Environmental Documents

The Department of Environmental Quality (DEQ) is responsible for coordinating Virginia's review of federal environmental documents prepared pursuant to NEPA and responding to appropriate federal officials on behalf of the Commonwealth. DEQ is also the lead agency for review of federal consistency determinations prepared pursuant to the Coastal Zone Management Act and the Virginia Coastal Resources Management Program.

The roles of the Virginia Department of Environmental Quality (DEQ) in relation to the Draft EIS will be as follows. First, DEQ's Office of Environmental Impact Review (this Office) will coordinate Virginia's review of the Draft EIS and comment to MMS on behalf of the Commonwealth. A similar review process will pertain to federal consistency determinations that must be provided for lease sales which can affect Virginia's coastal uses and coastal resources, pursuant to the Coastal Zone Management Act (CZMA) (see "Federal Consistency..." below). In order to ensure an effective coordinated review of the Environmental Impact Statement, we will require 30 copies of the document when it is published. Additional information on the submission of environmental documents may be found on the DEQ-OEIR web page at <http://www.deq.virginia.gov/eir/>.

2. Response to Scoping Requests

DEQ does not normally coordinate scoping comments for the preparation of environmental documents. However, the Virginia Department of Mines, Minerals, and Energy (DMME), with the assistance of DEQ and other agencies, is presently involved in a separate but related effort to study offshore drilling on the OCS of Virginia. The study committee is to report to the Virginia General Assembly as directed by House (of Delegates) Joint Resolution 625. In light of that effort and the MMS request for scoping comments on the proposed 5-year OCS oil and gas leasing program, DMME requested that DEQ-OEIR coordinate the submission of review agency scoping comments for this project and provide a single response to MMS.

The following state agencies and regional planning district commissions joined in this review of the Notice, and will be solicited in our later review of the Draft EIS:

- Department of Environmental Quality
- Department of Mines, Minerals, and Energy
- Department of Game and Inland Fisheries
- Department of Conservation and Recreation
- Department of Agriculture and Consumer Services
- Department of Health
- Department of Transportation
- Virginia Institute of Marine Science
- Virginia Port Authority
- Hampton Roads Planning District Commission
- Northern Virginia Regional Commission.

In addition, the following agencies and planning district commissions were invited to comment, and will be invited again when the Draft EIS is made available:

- Department of Historic Resources
- Marine Resources Commission
- RADCO Planning District Commission
- Richmond Regional Planning District Commission
- Northern Neck Planning District Commission

Middle Peninsula Planning District Commission
Accomack-Northampton Planning District Commission
Crater Planning District Commission.

3. Federal Consistency under the Coastal Zone Management Act

Pursuant to the Coastal Zone Management Act of 1972, as amended, federal activities affecting Virginia's coastal resources or coastal uses must be consistent, to the maximum extent practicable, with the Virginia Coastal Resources Management Program (VCP) (see section 307(c)(1) of the Act and the Federal Consistency Regulations, 15 CFR Part 930, sub-part C, section 930.32). Federally licensed or permitted activities must be consistent with the affected State's federally approved coastal zone management plan (subpart D, sections 930.50 et seq.). For individual lease sales offshore of Virginia, MMS must provide a consistency determination which involves an analysis of the activities in light of the affected State's coastal zone management plan (CZMP), and a commitment to comply with the CZMP. For consistency reviews in Virginia, we invite your attention to the Federal Consistency Regulations cited above, and to Virginia's Federal Consistency Information Package, which gives content requirements for federal consistency determinations. The Federal Consistency Information Package may be found at DEQ's web site:

- <http://www.deq.virginia.gov/eir/federal.html>.

If you have questions about the environmental review process or the federal consistency review process, please feel free to call me (telephone (804) 698-4325) or Charles Ellis of this Office (telephone (804) 698-4488).

PART A. DISCUSSION OF PLANNING INFORMATION REQUESTED BY MMS

Planning Information

The Notice indicated that MMS solicits comments for its consideration in determining the appropriate size, timing, and location of OCS leasing for the period from July 2007 through June 2012, and identifies eight factors for which information is requested (Notice, page 49672). This part of our Comments addresses these matters.

1. National energy needs. According to the Department of Mines, Minerals, and Energy (DMME), supply disruptions caused by recent hurricanes highlight the need for geographic diversification of domestic petroleum and natural gas production. With nearly 30% of domestic production concentrated in the Gulf of Mexico, storm-related shutdowns have a substantial impact on price and availability of these fuels.

2. Geographical, geological, and ecological characteristics of the planning areas of the OCS, nearshore, and coastal environments. According to the Virginia Institute of Marine Science (VIMS), a considerable body of historical information exists that focuses directly on this subject (historical summary in Burreson and Knebel, 1979),

much of which is from prior studies by VIMS. There is a need to re-evaluate older data in the context of proposed surveys and exploration, and to complete an updated synthesis with more recent data. The Mid-Atlantic Planning Area exists within the Middle Atlantic Bight (MAB), the latter being a well-defined contiguous biological zone with distinct physical and geological characteristics extending from Cape Cod in Massachusetts to Cape Hatteras in North Carolina. The exchange of water and movement of many species within the MAB dictate that impacts within the Mid-Atlantic Planning Area will have general impacts within the MAB as a whole. (See attached VIMS comments, page 2, for references.)

According to the Department of Mines, Minerals, and Energy (DMME), Virginia's outer continental shelf is included in MMS's Mid-Atlantic planning area. Any discussion of developing potential hydrocarbon resources in this planning area should recognize its geographic proximity to major East Coast energy markets, for example its closeness to Hampton Roads, an area with constrained natural gas supplies. The Mid-Atlantic planning area is also in proximity to ecologically sensitive features such as Chesapeake Bay and the Virginia Coast Reserve.

DMME states that the potential for commercial accumulations of natural gas or oil in the Mid-Atlantic planning area is poorly known. Only thirty-four wells have been drilled in its 82 million acres. Although this is more wells than have been drilled in any other Atlantic OCS area, a considerable portion of the area remains untested and many geological questions remain unresolved. Some of the wells, particularly those offshore of New Jersey, showed considerable promise for natural gas, even though they were considered uneconomic at the time they were drilled (between 1978 and 1984). Increased prices of both petroleum and natural gas since that time will no doubt change the economics of exploration and production. Further assessment of potential resources is needed to make informed decisions about the future use of this area.

The Hampton Roads Planning District Commission indicated, in its earlier position statement on the draft program proposal for the 1992-1997 lease sale program, that within 20 miles seaward of the Eastern Shore of Virginia, prevailing ocean currents appear to have the potential to direct any spilled material to the mouth of the Chesapeake Bay. The mouth of the Bay is sensitive, because of its use by young crabs and other species at critical stages of their life cycles. The area is also a major migration path for anadromous fish species.

In addition, according to the Commission, the shelf canyons are inhabited by a unique mix of species. Relatively little study has been completed in the Washington Canyon, but it is believed to be similar, and ecologically related, to the nearby Norfolk Canyon, which was (at the time of the policy statement) being designated as a National Marine Sanctuary. This area warrants protection. Moreover, the appropriate size of a buffer around the area had not been determined (at the time of the policy statement) and may still require study.

According to the Department of Game and Inland Fisheries, the area being considered for exploratory drilling is in federal waters that extend from 30 to 140 miles east of Assateague Island. These waters likely support seasonal or year-round occurrences of the following listed species (listing is by the federal government unless otherwise noted):

- Loggerhead sea turtles (*Caretta caretta*), listed as threatened;
- Kemp's Ridley sea turtles (*Lepidochelys kempii*), listed as endangered;
- Green sea turtles (*Chelonia mydas*), listed as threatened; and
- Leatherback sea turtles (*Dermochelys coriacea*), listed as endangered.

Additionally, the proposed exploratory drilling area may fall within the ranges of several marine mammal species, including the following:

- Northern Right Whale (*Balaena glacialis*), listed as threatened;
- Humpback Whale (*Megaptera novaeangliae*), listed as endangered;
- Sei Whale (*Balaenoptera borealis*), listed as endangered; and
- Fin Whale (*Balaenoptera physalus*), listed as endangered.

The exploratory drilling area may also represent important migration and wintering habitats for Red Phalaropes (*Phalaropus fulicaria*), Red-necked Phalaropes (*Phalaropus lobatus*), and a variety of seabirds and sea ducks. Lastly, millions of migratory landbirds (passerines and raptors) funnel through the lower Delmarva Peninsula each fall making it one of the most important staging areas along the Atlantic Flyway. To date, little is known about landbird occurrences over Virginia's nearshore and offshore waters. However, preliminary results from the NPOL (NASA Portable S-band Multi-parameter Weather Research Radar) Radar Study currently being conducted on Virginia's Eastern Shore, which examines local fall landbird migration patterns via radar, suggest that some fall migrants may follow offshore flight paths. It is possible these offshore flight paths may intersect with the proposed project area.

Virginia's nearest landmass to the proposed exploratory drilling area is the southern half of Assateague Island, which encompasses a large portion of Chincoteague National Wildlife Refuge and is part of Assateague National Seashore. Assateague Island is an important breeding area for a number of beach nesting waterbirds; these include:

- Piping Plover (*Charadrius melodus*), listed as threatened;
- the American Oystercatcher (*Haematopus palliatus*), a species of high concern according to the U.S. Shorebird Conservation Plan;
- the Least Tern (*Sterna antillarum*), a State Species of Special Concern, and
- the Black Skimmer (*Rynchops niger*).

Assateague Island also represents an important migration stopover site and wintering area for shorebirds and waterfowl. In recent years, the island has provided nesting habitat for at least two loggerhead sea turtles. The barrier islands south of Assateague Island (i.e., Wallops Island, Assawoman Island, Metompkin Island and Cedar Island) are also important breeding areas for Piping Plovers, American Oystercatchers, Least Terns, and Black Skimmers. In addition, these islands support the following species (status listed):

- Wilson's plover (*Charadrius wilsonia*) listed as endangered by the State;
- Gull-billed Tern (*Sterna nilotica*), listed as threatened by the State; and
- Common Tern (*Sterna hirundo*).

Lastly, the entire Eastern Shore of Virginia's seaside lagoon system and barrier island chain serve as globally important migration corridors and stopover sites for thousands of shorebirds annually. This ecosystem supports numerous species of breeding colonial waterbirds (wading birds, gulls, skimmers, pelicans, and terns), marshbirds, waterfowl, shorebirds, passerines and raptors (including the Bald Eagle (*Haliaeetus leucocephalus*), listed as threatened by the federal government, and the Peregrine Falcon (*Falco peregrinus*), listed as threatened by the State. The barrier islands and lagoon system provide important wintering habitat for a wide variety of waterbirds and landbirds. The barrier island chain supports a large population of nesting diamondback terrapins, listed as a species of concern by the federal government, and provides breeding habitat for a few loggerhead sea turtles. The majority of barrier island sea turtles nests have been recorded on Assateague Island. This is likely due to the fact that the island is heavily monitored during the Piping Plover breeding season.

3. Equitable sharing of developmental benefits and environmental risks among the various planning areas. As one state within a single planning area (Mid-Atlantic), we offer no comments on this factor.

4. Location of planning areas with respect to, and the relative needs of, regional and national energy markets. According to the Department of Mines, Minerals, and Energy (DMME), the Atlantic coastal states include major energy markets, accounting for 22% of U.S. natural gas consumption and 31% of petroleum product consumption annually. In Virginia, most energy use is in coastal areas. Some of these areas have experienced natural gas supply constraints in the recent past, due to distance from source areas and inadequate pipeline infrastructure. Development of natural gas resources near these markets would reduce supply disruptions and transportation costs, and reduce the risk of transportation-related accidental discharges. These factors should be considered in making decisions on the future of the Atlantic OCS.

5. Other uses of the sea and seabed.... Fishing activity, according to the Virginia Institute of Marine Science (VIMS), is area-specific and presents obvious

conflicts. A comprehensive discussion of offshore pipeline corridors and landfalls is given in Rooney-Char and Ayres (1978) (see references, enclosed VIMS comments, page 2). Despite the vintage of this report, the principal arguments therein remain current.

6. *Relative environmental sensitivity and marine productivity of the different planning areas and/or specific section of a given planning area of the OCS.* The Virginia Institute of Marine Science (VIMS) indicates that living marine resources in the Mid-Atlantic Bight (MAB, defined above; see item 2) are protected under the Fishery Conservation and Management Act (FCMA, also known as the reauthorization of the Magnuson-Stevens Act), the Marine Mammal Protection Act (MMPA), and the Endangered Species Act. The FCMA promotes identification and protection of essential fish habitat (EFH). Fishery resources are of considerable value to the Virginia economy, and are managed in the MAB through increasingly sophisticated federal management plans. Fishery management structure is becoming more sensitive to specific area management. Many areas are designated as EFH, and their protection includes closure to fishing. The Norfolk Canyon and the benthic ridge and swale topography have long been recognized as sensitive environments within the MAB. Seismic technology, a vital tool in oil and gas surveys, presents challenges to the mammals protected under MMPA. The Endangered Species Act protects sea turtles within the MAB.

7. *Environmental and predictive information pertaining to offshore and coastal areas....*

(a) DEQ Waste Division guidance on environmental investigations. The EIS should include an environmental investigation on and near coastal property to identify any solid or hazardous waste sites or issues, according to DEQ's Waste Division. This should include a search of waste-related databases. Detailed information on Virginia's data bases is available in the attached comments from DEQ's Waste Division (DEQ memo, Brockman to Fisher, dated September 21, 2005,

(b) Information and Guidance from the Virginia Institute of Marine Science. The faculty and staff of VIMS represent a significant body of expertise in the physical, environmental, and living marine resources in the Mid-Atlantic Planning Area. The breadth of this expertise includes predictive wave and current modeling through fishery resource population assessment and management. For additional discussion and information, MMS may contact VIMS (Dr. Roger Mann, telephone (804) 684-7108, or e-mail rmann@vims.edu)

(c) Sources of Information on Virginia's Coastal Resources. The Department of Game and Inland Fisheries offers the following listing of information sources:

1. Onshore, nearshore and offshore movements of migratory landbirds – Sarah Mabey, NC State University (sarah_mabey@ncsu.edu) and Bryan Watts, Center

for Conservation Biology at the College of William and Mary (bdwatt@mail.wm.edu).

2. Offshore distribution, abundance and movement patterns of seabirds – Doug Forsell, US Fish and Wildlife Service (doug_forsell@fws.gov).
3. Onshore, nearshore and offshore movements of migratory shorebirds – Brian Harrington, Manomet Center for Conservation Sciences (bharr@manomet.org).
4. Offshore distribution, abundance and movement patterns of marine mammals – Sue Barco, Virginia Aquarium and Marine Science Center (ocrab@erols.com).
5. Offshore distribution, abundance and movement patterns of sea turtles – Jack Musick, VA Institute of Marine Science (jmusick@vims.edu) and Kate Mansfield, VA Institute of Marine Science (ktlm@vims.edu).
6. Colonial waterbirds and shorebirds on Virginia's barrier islands and seaside lagoon system – Barry Truitt, The Nature Conservancy (btruitt@tnc.org) and Mike Erwin, University of Virginia (rme5g@cms.mail.virginia.edu).
7. Chincoteague National Wildlife Refuge (CNWR) and its natural resources – Bill Haglan, CNWR (William_Haglan@fws.gov).

8. Methods and procedures for assuring the receipt of fair market value for lands leased. Virginia has no comments on this topic at this time.

9. Additional Planning Recommendations. The Department of Conservation and Recreation recommends that MMS include, in the planning documents or in the Draft EIS, an appropriate emergency spill management plan. This plan should include specific attention to and protection of potentially affected natural heritage resources. "Natural heritage resources" are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations. Additional information on this recommendation is available from the Department of Conservation and Recreation (Rene` Hypes, Division of Natural Heritage, telephone (804) 371-2708).

In addition to emergency spill planning, the Department of Conservation and Recreation recommends that MMS solicit the Department's review of OCS areas identified for leasing. See "Scoping for the EIS," item 2(f), below.

Other Questions in the Notice

The Virginia DMME addressed several other questions in the Notice, as indicated here.

1. Proper Role of the OCS in National Energy Policy (*Notice, page 49672*). Parts of the Outer Continental Shelf have already been developed for oil and natural gas, as have some federal onshore lands. Oil and gas from federal lands and offshore waters already provide 35% of total U.S. domestic production (see note 1, enclosed DMME comments, page 5). Although petroleum and natural gas are non-renewable resources, the complete replacement of these fuels by alternative and renewable fuels is unlikely in the near future. Therefore, remaining undeveloped resources will be

needed until practical alternatives are found and developed. Assuming that the U.S. will continue to consume more petroleum and natural gas fuels than it can produce, and considering that many parts of the OCS are not fully explored, it's apparent that the OCS will continue to play an important role in meeting U.S. energy needs.

2. Inventory Provisions of the Energy Policy Act of 2005 (*Notice, page 49672*). According to DMME, MMS asked if there are existing data on oil and gas resources in the OCS. While somewhat dated, the Department of Mines, Minerals and Energy, in conjunction with the United States Geological Survey, published DMME, DMR Publication 73, *Geology and Petroleum Potential of Mesozoic and Cenozoic rocks, Offshore Virginia* (1987). This publication is available from DMME.

3. Gas-Only Leasing (*Notice, page 49672*). According to DMME, analysis of previously drilled sites in the Mid-Atlantic region indicates that the geological conditions are more gas-prone than oil-prone. Pending the results of further resource assessment, this area may be particularly well suited to gas-only production. Recognizing that there are still issues to be resolved regarding gas-only leasing (such as what to do if a well encounters both gas and oil), this area could, subject to continued environmental review and assessment of technologies that are available to ensure environmental and public safety, serve as a testing ground for such an approach. It should also be noted that the Virginia General Assembly, in House Joint Resolution 625 (2005), which mandated the current Virginia study, only authorized the consideration of exploration for natural gas.

PART B. SCOPING FOR EIS

The Notice solicits comments on the significant environmental issues associated with OCS oil and gas leasing and development, and on alternative options for the size, timing, and location of lease sales that should be evaluated in the EIS (page 49673). Our comments on these matters follow.

1. Potential Environmental Impacts.

In general, the Draft EIS should discuss the impacts of oil and gas exploration and production, including impacts from drilling, production, related vessel traffic, and construction and use of new infrastructure. The impact analysis should include consideration of:

1. Effects of gas exploration and production activities on wildlife resources that occur in proximity to sensitive ecological areas such as barrier islands.
2. Construction and operation impacts of offshore and land-based gas exploration/production infrastructure (e.g., installation and operation of pipelines used to transport gas from the offshore platform to land, construction and operation of drill platforms, drill ship anchoring systems) on marine and terrestrial environments.
3. Oil, trash, and other harmful materials stemming from gas drilling operations entering the ocean environment.

4. Oil, trash, and other harmful materials stemming from gas drilling operations washing ashore on barrier islands and/or entering seaside lagoon systems.
5. Impacts of large vessel traffic on sea turtles and marine mammals.
6. Impacts of offshore lighting on marine organisms such as sea turtles, marine mammals, fish, aquatic prey species, birds, etc.
7. Impacts of de-commissioning and removing gas production structures on the marine environment.

2. Wildlife Resources. According to the Department of Game and Inland Fisheries, a number of research and information needs can be addressed, at least in part, with data currently available. These include:

1. Assess the density, abundance and distribution of resident and migrating waterbirds, passerines, marine mammals, and sea turtles in the project area throughout the annual cycle (contact individuals listed above, "Discussion of Planning Questions," item 7(d), for existing data).
2. Assess the potential for gas exploration/gas production infrastructure and associated lighting to attract unnatural concentrations of benthic and water column dwelling organisms in the project area, which, in turn, may disrupt normal migration patterns (i.e., prolong length of stay in the area) of sea turtles, marine mammals and seabirds that forage on these organisms (gather data from studies and monitoring programs conducted at existing offshore oil production sites).
3. Assess whether gas industry ship traffic will result in an increase in sea turtle and marine mammal vessel strikes (gather data from studies and monitoring programs conducted at existing offshore oil production sites).
4. Assess the effects of drill ship lights on sea turtle hatchlings that may pass through the project area. It is well known that sea turtle hatchlings emerging from the nest cavity exhibit a strong tendency to orient towards the brightest direction. On developed beaches with beachfront lighting, hatchlings will often crawl towards artificial light sources rather than towards the water. This strong attraction to luminaires elicits a "light trapping" response whereby artificial light fields become the only visible features the turtles perceive. Artificial lights at sea may elicit the same response from sea turtle hatchlings in the water. Of particular concern are those hatchlings that emerge from nests laid on Virginia's barrier islands that may pass through the project area as they make their way to the Gulf Stream. However, if the drill ships are located in the path of the Gulf Stream, thousands of sea turtle hatchlings could be drawn towards and congregate under drill ship lights. Such a response would not only lead to a disruption in normal movement patterns; it would also result in large number of young turtles falling prey to potentially high concentrations of predators (gather data from studies and monitoring programs conducted at existing offshore oil production sites).

5. Assess the effects of artificial lighting associated with gas exploration activities on all avian species that may pass through the proposed project area or use it as a foraging or stopover site.
6. Gather information on tested methods used to assess potential avian, marine mammal and sea turtle mortality (i.e., locating carcasses at sea, observation methods) in gas exploration project areas and list them in the feasibility study.
7. Determine the full extent of the offshore and land-based infrastructure and support systems needed to conduct exploratory drilling, including size and number of support vessels, a full description of drill ships, drill equipment, and lighting requirements, the length of time it will take to complete the drilling, time of year the drilling will occur, drilling depths, and location of proposed drill sites, if known. This information should not only be included in the feasibility study, but should be disseminated to all state agencies that are assisting with the study prior to its completion (information source – MMS?).
8. Determine the extent to which gas exploration and production could affect wildlife resources that reside on sensitive areas such as Virginia's barrier islands and Eastern Shore seaside lagoon system (gather data from studies and monitoring programs conducted at existing offshore oil production sites).
Determine where the land-based gas production infrastructure will be located.

3. Water Quality and Related Impacts. According to DEQ's Division of Water Quality and DEQ's Coastal Program, the potential for impacts resulting from exploration, drilling, installation of infrastructure, and associated vessel traffic could be significant. Exploration includes seismic exploration conducted from boats; the impacts might be temporary but could also be significant. In addition, the potential for water quality impacts is significant from production. Any of the potential contaminants, in addition to affecting water quality and organisms, could wash ashore and have significant impacts on ecologically sensitive areas. The analysis in the Draft EIS of potential impacts of exploration and production upon coastal resources should include consideration of the following:

- water quality, including impacts from debris, oil and other contaminants from the boats and equipment
- Acoustic impacts to marine mammals and fish
- Disruption to fish, birds, reptiles and mammals (migration, feeding, mating, spawning) from the increased activity
- Direct habitat disturbance to the submerged land where the activity occurs, including impacts to submerged aquatic vegetation beds, oyster reefs and other shellfish habitats
- Geologic disturbance (erosion, sea floor sloughing).

The exploration, drilling and production of natural gas and oil deposits in coastal waters, including those offshore of Virginia, would require the support of additional infrastructure. This may include pipelines to transport gas and oil onshore as well as onshore processing facilities and any additional port or manufacturing facilities that

would be needed to build and service the platforms. Subaqueous lands (including SAV and oysters), wetlands, dunes, beaches, riparian buffers, other sensitive coastal habitats, and wildlife could be affected by the placement of the pipeline and onshore processing facilities.

4. Waste Sites. As indicated above (Part A, "Planning Information," item 7(a)), the Draft EIS should address the potential interaction of OCS oil and gas production and distribution with known contamination sites, and include measures to avoid or control any such interactions.

5. Air Quality. The Draft EIS should address the impacts of offshore activities on on-shore air quality, backed up by model studies if necessary. This is particularly significant for coastal areas that are designated as non-attainment for the 8-hour ozone standard. In addition, on-shore activities should be evaluated, and measures taken to ensure that they do not adversely affect air quality.

6. Natural Heritage Resources and Mapping. The Draft EIS should include effective mapping of proposed OCS lease sale areas, in order to allow determinations and recommendations to be made for the protection of natural heritage resources. These recommendations may include surveys.

7. Endangered and Threatened Plants and Insects. The Draft EIS should address potential impacts of OCS activities upon threatened and endangered plant and insect species. For example, the Department of Agriculture and Consumer Resources reports that one plant species, *Amarantus pumilus*, inhabits Atlantic coastal beaches and is subject to protection under the Virginia Endangered Plant and Insect Species Act. Additional endangered and threatened plant and insect species (listed by state and federal governments) are located in the vicinity of beaches and waterways of the Chesapeake Bay. Impacts on similar resources on coastal beaches and waterways should be discussed in the Draft EIS.

8. Land Transportation. The Draft EIS should consider potential impacts of OCS activities that could increase freight traffic or create new trip generators on the nation's roads, highways, and railroads. Virginia's Department of Transportation indicates that an OCS oil and gas lease program will not adversely affect Virginia's road transportation system.

9. Seaport Concerns. According to the Virginia Port Authority, the Draft EIS should analyze impacts of the OCS leasing program and resulting activities upon maritime shipping lanes.

10. Emergency Plan for Spills. The planning effort, and/or the Draft EIS, should include preparation of an emergency plan to address oil spills and other contamination from OCS lease activities. The plan should be subject to public review.

11. Additional Information Needs. DEQ's Virginia Coastal Program, on behalf of Virginia's Coastal Policy Team, has identified a number of items of information that will be necessary in the Draft EIS in order to allow an effective review of the impacts of OCS oil development. These are:

- Use of the proposed areas by fish, mammals, reptiles and birds
- Impact of seismic exploration activities on marine animals
- How the scale of operation affects the extent of impact
- Cumulative impacts of OCS drilling (e.g., if all East Coast states started producing) on sea floor movement, long-term productivity of the benthic environment, and fisheries.
- Impact from large gas escapes (global warming, buoyancy of water, air quality)
- Likelihood of some type of failure or accident at the operation site which could lead to significant impacts depending on the currents and type of incident. This should take into account the prevailing water and air circulation patterns and their relation to sensitive coastal resources in each state.
- Evaluation of wastewater disposal issues associated with piping natural gas to onshore locations (such as the Hampton Roads area in Virginia) for processing and distribution.
- Potential for natural gas exploration or drilling activities to adversely affect, either directly or indirectly, historic, architectural, and archaeological resources. This includes the potential range of effects on these resources, not just the physical impacts.
- Sustainability of natural gas as a fuel source. This study should consider projections related to a hydrogen economy and the natural gas infrastructure being used to transition to a hydrogen economy.

Thank you for the opportunity to provide scoping comments for the Draft EIS and other comments relative to the planning of the 2007-2012 OCS oil and gas lease sale program. If you have questions, please feel free to call me at (804) 698-4325, John Fisher of this Office at (804) 698-4339, or Charles Ellis of this Office at (804) 698-4488.

We hope this information is helpful to you.

Sincerely,

Ellie L. Irons
Program Manager
Office of Environmental Impact Review

Enclosures
cc: (next page)

cc: John D. Bowden DEQ-NRO
Harold J. Winer, DEQ-TRO
Susan A. Ridout, DEQ-PRO
Kotur S. Narasimhan, DEQ-Air
Allen R. Brockman, DEQ-Waste
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